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Astor

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(54) **METHOD AND STEPLADDER WITH A TRAY**

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(52) **U.S. Cl.**
USPC **182/124**; 182/115; 182/116; 182/129; 182/152; 182/156; 182/160; 182/165; 182/173

(58) **Field of Classification Search**
USPC 182/129, 152, 156, 160, 165, 173, 115, 182/116, 124
See application file for complete search history.

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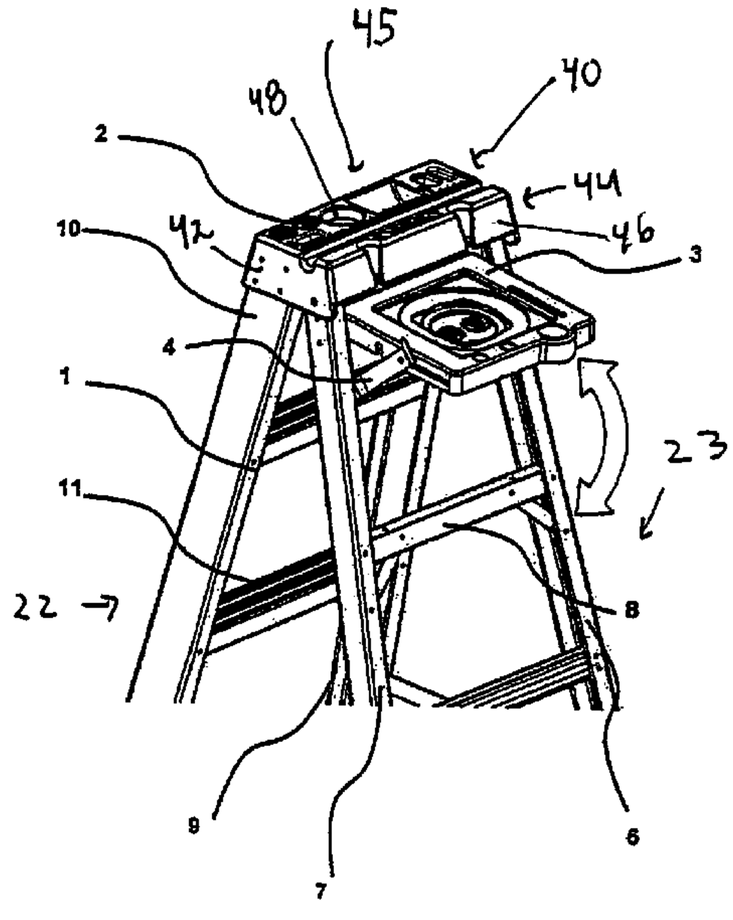
(57) **ABSTRACT**

A stepladder includes a front section having a right front rail and a left front rail in parallel and spaced relation with the right front rail, and front steps attached to the right and left front rails. The ladder includes a rear section having a right rear rail and a left rear rail in parallel and spaced relation with the right rear rail, and a rear horizontal attached to the right rear rail and the left rear rail. The ladder includes a top to which the front and rear sections are connected. The ladder includes a tray pivotally attached to the right and left rear rails having a closed position essentially in parallel with the right and left rear rails and an opened position essentially in parallel with ground, the tray pivoting up from the closed position to the open position. A method for using a stepladder. The method includes the steps of positioning a front section and a rear section of the stepladder attached to a top of the stepladder. There is the step of pivoting up a tray pivotally attached to a right rear rail and a left rear rail of a rear section of the stepladder from a closed position essentially in parallel with the right and left rear rails to an opened position essentially in parallel with ground.

5 Claims, 3 Drawing Sheets



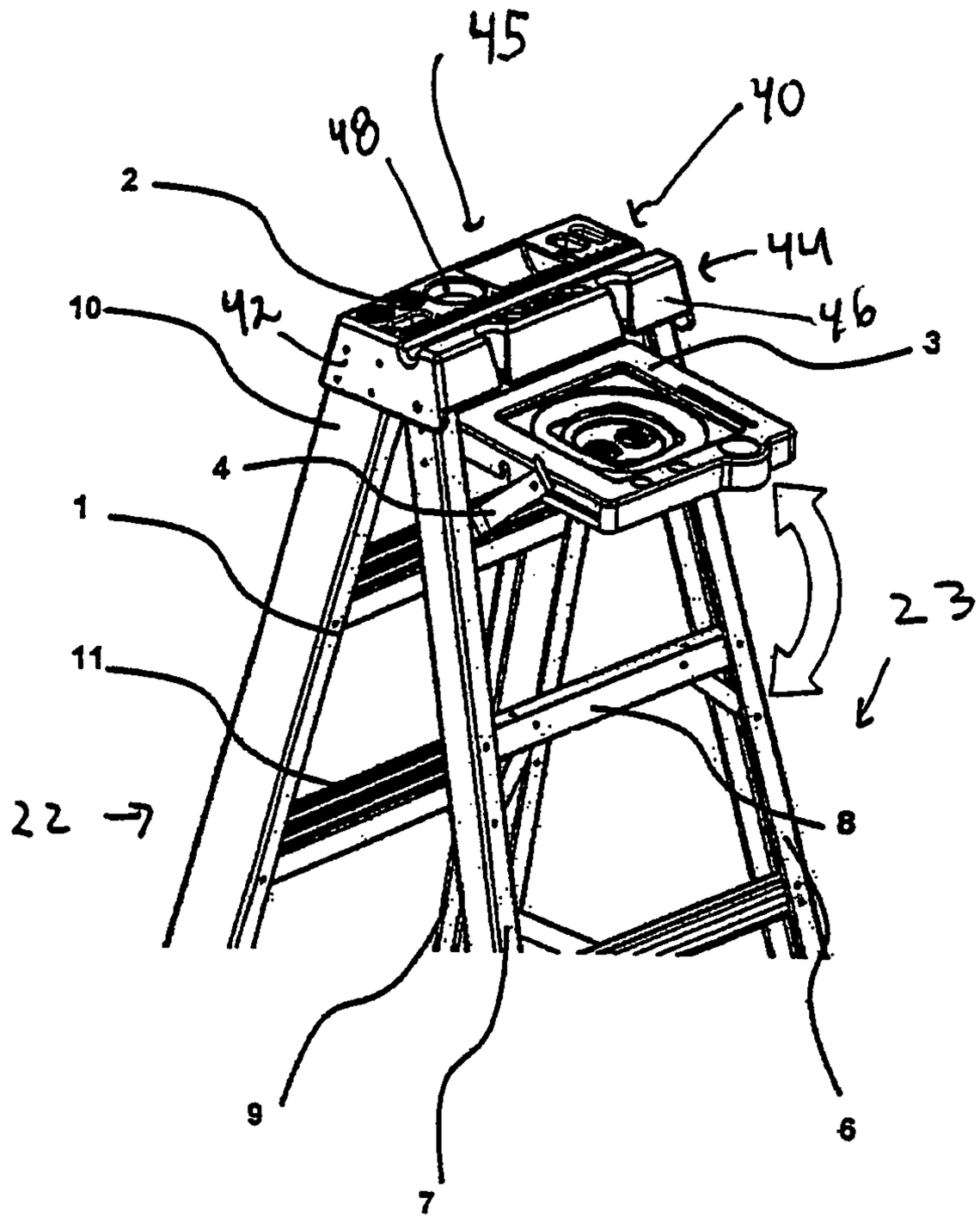


Figure 1

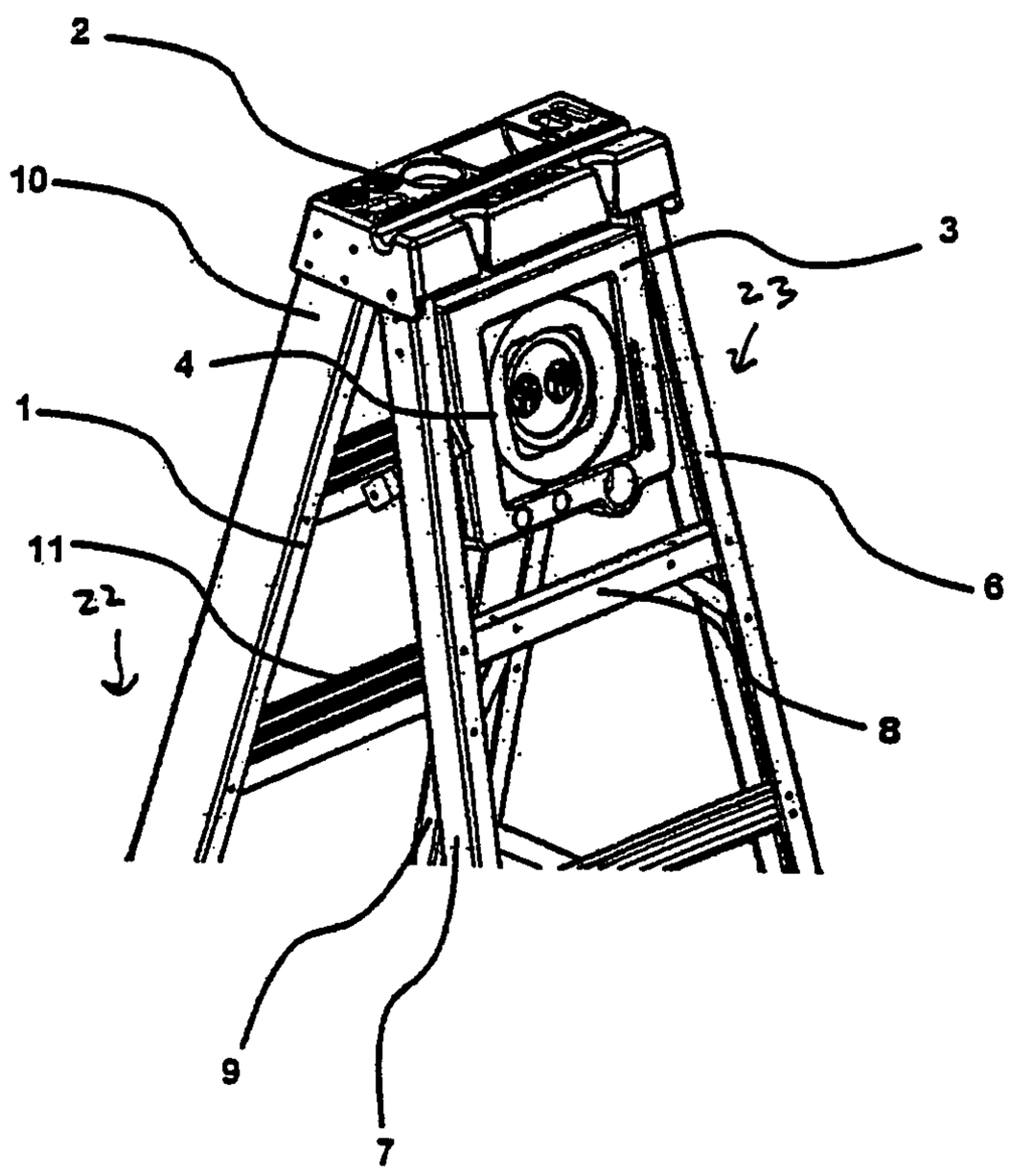


Figure 2

Figure 3

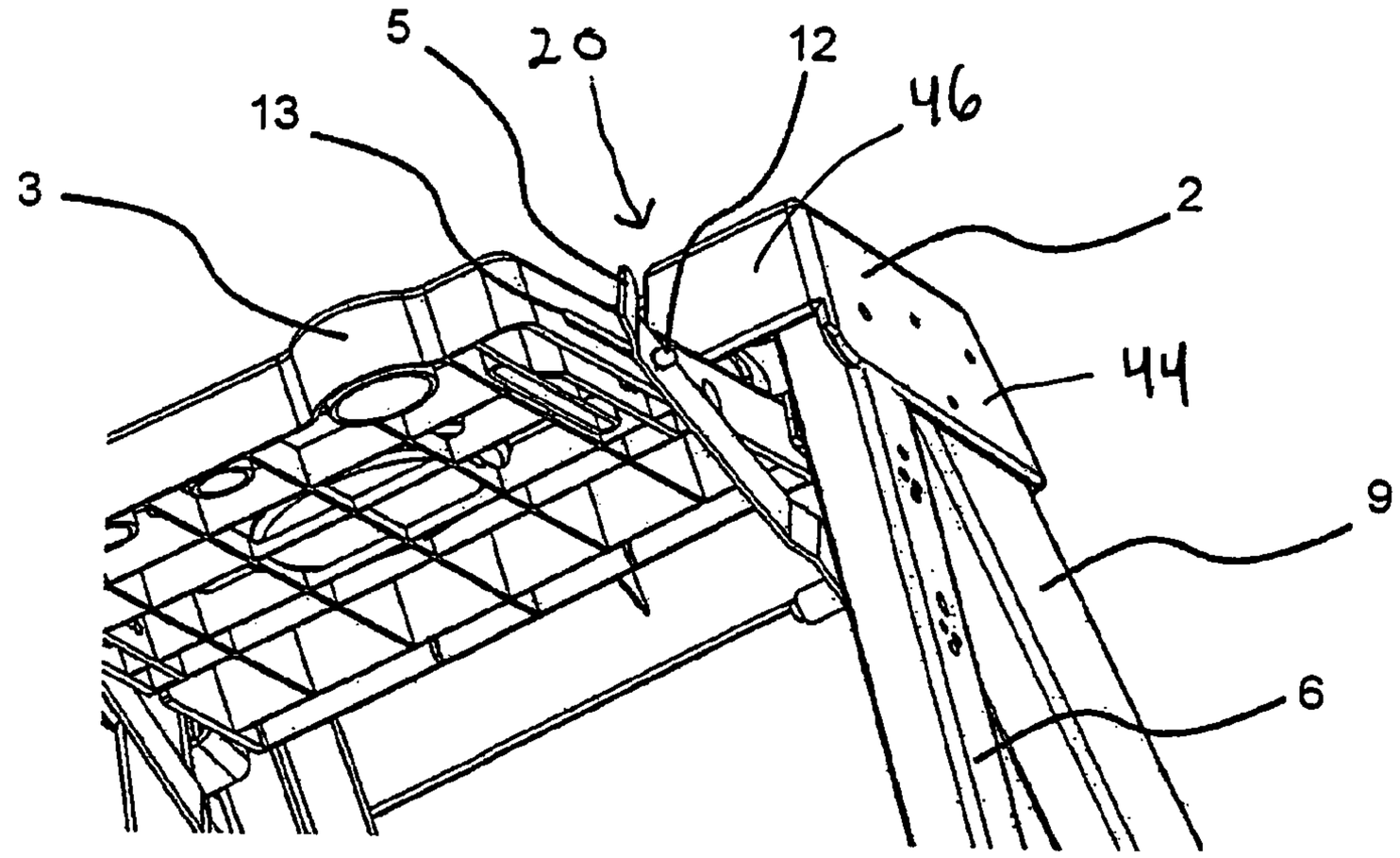
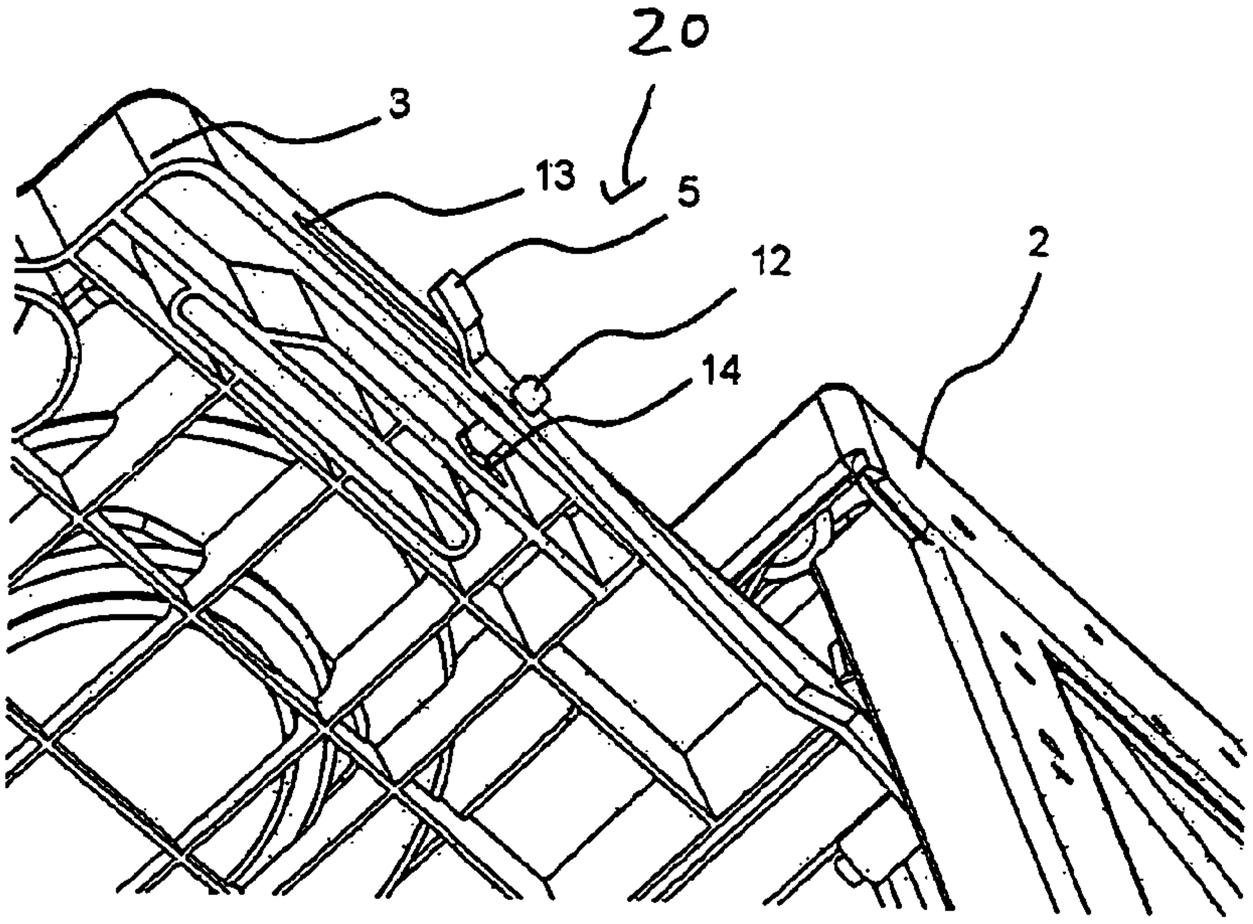


Figure 4



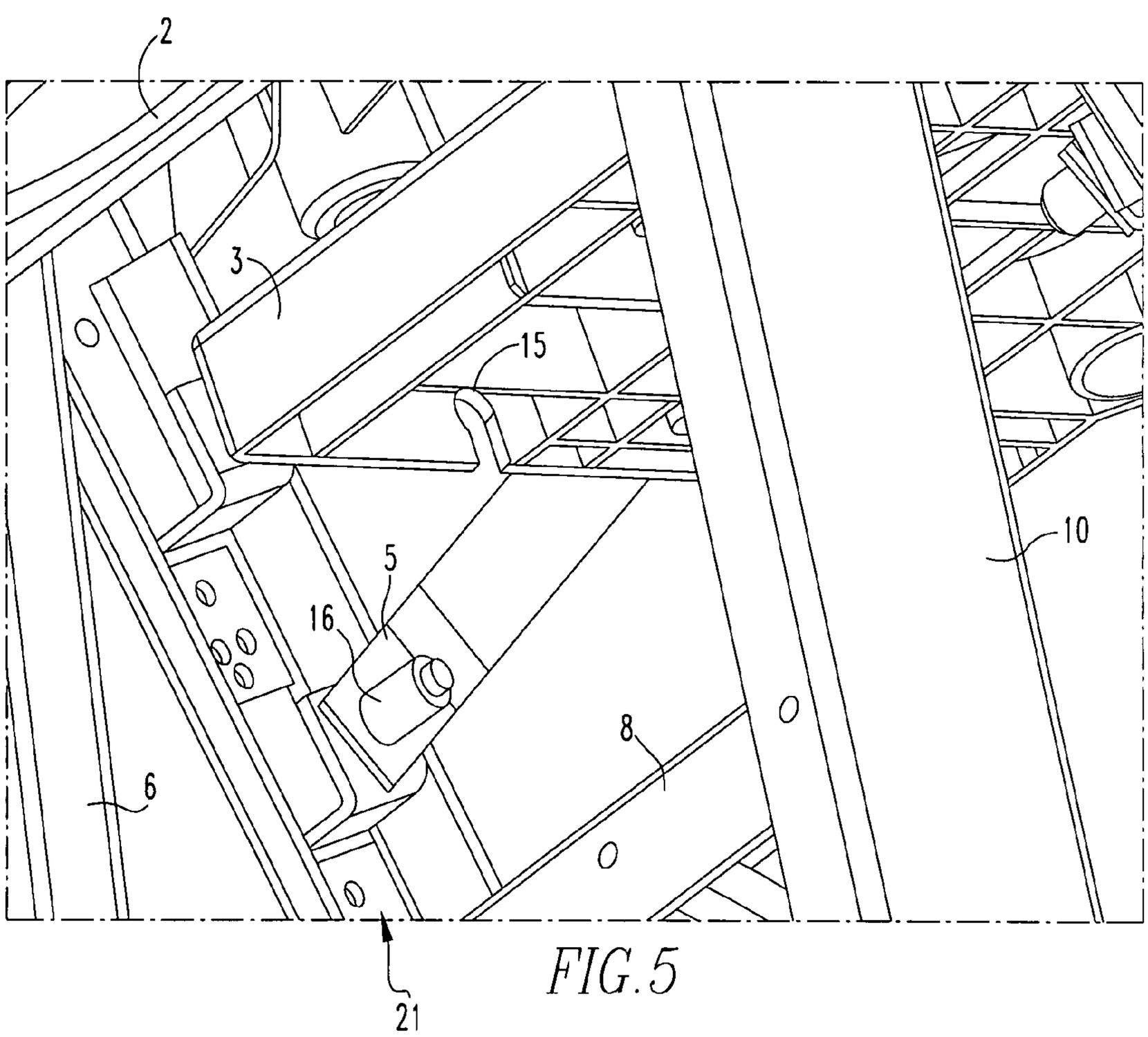


FIG. 5

METHOD AND STEPLADDER WITH A TRAY

FIELD OF THE INVENTION

The present invention is related to a stepladder having a tray pivotally attached to the right and left rear rails having a closed position essentially in parallel with the right and left rear rails and an opened position essentially in parallel with ground. More specifically, the present invention is related to a stepladder having a tray pivotally attached to the right and left rear rails having a closed position essentially in parallel with the right and left rear rails and an opened position essentially in parallel with ground where the tray pivots up from the closed position to the open position and can be locked in either the closed position or the open position.

BACKGROUND OF THE INVENTION

There are several different kinds of trays or shelves that are designed to work on stepladders. These trays rest below the top on the rear horizontal of the stepladder and rotate down and away from the user. The tray of the present invention is fastened to the rear side rails of the ladder and is pivoted up towards the user. The tray is now closer in line with the top of the ladder giving the user easier access to implements stored on the tray.

Most trays are situated on the rear horizontal and rotate down away from the user. There are auto closing and manual closing designs.

U.S. Pat. Nos. 7,188,706 and 7,128,187 are directed towards pivoting step stool trays. The step stools must have a pivoting step with respect to the rear or front side rails of the stool.

BRIEF SUMMARY OF THE INVENTION

The present invention pertains to a stepladder. The ladder comprises a front section having a right front rail and a left front rail in parallel and spaced relation with the right front rail, and front steps attached to the right and left front rails. The ladder comprises a rear section having a right rear rail and a left rear rail in parallel and spaced relation with the right rear rail, and a rear horizontal attached to the right rear rail and the left rear rail. The ladder comprises a top to which the front and rear sections are connected. The ladder comprises a tray pivotally attached to the right and left rear rails having a closed position essentially in parallel with the right and left rear rails and an opened position essentially in parallel with ground, the tray pivoting up from the closed position to the open position.

The present invention pertains to a method for using a stepladder. The method comprises the steps of positioning a front section and a rear section of the stepladder attached to a top of the stepladder. There is the step of pivoting up a tray pivotally attached to a right rear rail and a left rear rail of a rear section of the stepladder from a closed position essentially in parallel with the right and left rear rails to an opened position essentially in parallel with ground.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

In the accompanying drawings, the preferred embodiment of the invention and preferred methods of practicing the invention are illustrated in which:

FIG. **1** is an overhead perspective view of the stepladder of the present invention with the tray in the opened position.

FIG. **2** is an overhead perspective view of the stepladder of the present invention with the tray in the closed position.

FIG. **3** is an underside perspective view of the first locking assembly of the stepladder of the present invention with the tray in the opened position.

FIG. **4** is an underside perspective view of the first locking assembly of the stepladder of the present invention with the tray in the opened position.

FIG. **5** is an underside perspective view of the second locking assembly of the stepladder of the present invention with the tray in the opened position.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings wherein like reference numerals refer to similar or identical parts throughout the several views, and more specifically to FIGS. **1** and **2** thereof, there is shown a stepladder **1**. The ladder **1** comprises a front section **22** having a right front rail **10** and a left front rail **9** in parallel and spaced relation with the right front rail **10**, and front steps **11** attached to the right and left front rails **10**, **9**. The ladder **1** comprises a rear section **23** having a right rear rail **7** and a left rear rail **6** in parallel and spaced relation with the right rear rail **7**, and a rear horizontal **8** attached to the right rear rail **7** and the left rear rail **6**. The ladder **1** comprises a top **2** to which the front and rear sections **22**, **23** are connected. The ladder **1** comprises a tray **3** pivotally attached to the right and left rear rails **7**, **6** having a closed position essentially in parallel with the right and left rear rails **7**, **6** and an opened position essentially in parallel with ground, the tray **3** pivoting up from the closed position to the open position.

Preferably, the stepladder **1** includes a right tray link **4** and a left tray link **5** attached to the right rear rail **7** and the left rear rail **6**, respectively, and engaged with the tray **3**. The stepladder **1** preferably includes a first locking assembly **20** engaged with the tray **3** and the left tray link **5** to lock the tray **3** in the opened position, as shown in FIGS. **3** and **4**. Preferably, the stepladder **1** includes a second locking assembly **21** engaged with the tray **3** and the left tray link **5** to lock the tray **3** in the closed position, as shown in FIG. **5**.

The tray **3** preferably includes a slot **13** and a locking hole **14**, and the first locking assembly **20** includes a locking pin **12** extending into the slot **13** and attached to the left tray link **5** which moves along the slot **13** as the tray **3** goes from the closed position to the opened position and fits into the locking hole **14** when the tray **3** is in the opened position to lock the tray **3** in the opened position. Preferably, the tray **3** includes an opening **15**, and the second locking assembly **21** includes a closing stud **16** attached to the left tray link **5** which snaps into the opening **15** when the tray **3** is moved into the closed position to lock the tray **3** in the closed position.

The present invention pertains to a method for using a stepladder **1**. The method comprises the steps of positioning a front section **22** and a rear section **23** of the stepladder **1** attached to a top **2** of the stepladder **1**. There is the step of pivoting up a tray **3** pivotally attached to a right rear rail **7** and a left rear rail **6** of a rear section **23** of the stepladder **1** from a closed position essentially in parallel with the right and left rear rails **7**, **6** to an opened position essentially in parallel with ground.

Preferably, there is the step of locking the tray **3** in the opened position with a first locking assembly **20** engaged with the tray **3** and a left tray link **5** to lock the tray **3** in the opened position. There are preferably the steps of moving the tray **3** from the opened position to the closed position and locking the tray **3** in the closed position with a second locking assembly **21**. Preferably, the locking the tray **3** in the opened

position includes the step of moving a locking pin **12** of the first locking assembly **20** extending into a slot **13** of the tray **3** and attached to the left tray link **5** into a locking hole **14** of the tray **3** to lock the tray **3** in the opened position. The moving the tray **3** from the opened position to the closed position includes the step of snapping a closing stud **16** of the second locking assembly **21** attached to the left tray link **5** into an opening **15** of the tray **3** to lock the tray **3** in the closed position.

FIG. **1** shows the stepladder **1** with attached paint tray **3**. The ladder **1** has a left front rail **9**, right front rail **10**, left rear rail **6** and a right rear rail **7**. The front rails **9**, **10** are connected with a plurality of front steps **11**. The rear side rails **6**, **7** are connected with a plurality of rear horizontal **8** or steps **8**. The ladder top **2** connects the front and rear sections **22**, **23**.

The tray **3** is in the open position in FIG. **1**. The right and left tray links **4** and **5** are pulled out and the tray **3** can be rotated to the closed position FIG. **2**. The tray **3** when in the closed position is parallel to the rear rails **6** and **7**.

FIGS. **3** and **4** are close up underside views of the assembly. The left tray link **5** is connected to the locking pin **12** which is inserted through the slot **13** in the tray **3**. The top **2** has a surface **40** and has a right side **42** and left side **44** in spaced relation with the right side **42**, a front side **45** and a rear side **46** in spaced relation with the front side **45**. The right, left, front and rear sides extend down from the surface **40**. The right and left sides connected to the front and back sides. The surface **40** having a recess **48**, a right rear rail **7** of the rear section **23** attached to the right side **42** and a left rear rail **6** of the rear section **23** attached to the left side **44**.

To open the tray **3**, the user pulls the tray **3** from the at rest position FIG. **2** towards the top **2** of the ladder **1** until the left and right tray links **4**, **5** snap into place. When the tray **3** is in the opened position, the left tray link **5** pushes the locking pin **12** into the locking hole **14** securing the tray **3**, preferable parallel to the ground.

To close the tray **3**, the user pulls the right and left tray links **4**, **5** out. As the tray **3** is being pushed down to the closed position, the locking pin **12** slides down the slot **13** in the side of the tray **3**. The opening **15** on the tray **3** snap onto the closing stud **16** which is connected to the left and right tray links **4**, **5** to keep the tray closed and secure for transportation.

Although the invention has been described in detail in the foregoing embodiments for the purpose of illustration, it is to be understood that such detail is solely for that purpose and that variations can be made therein by those skilled in the art without departing from the spirit and scope of the invention except as it may be described by the following claims.

The invention claimed is:

1. A method for using a stepladder comprising the steps of:

positioning a front section and a rear section of the stepladder attached to a top of the stepladder, the top has a surface and has a right side and left side in spaced relation with the right side, a front side and a rear side in spaced relation with the front side, the right, left, front and rear sides extending down from the surface, the right and left sides connected to the front and back sides, the surface having a recess, a right rear rail of the rear section attached to the right side and a left rear rail of the rear section attached to the left side, a right front rail of the front section attached to the right side and a left front rail of the front section attached to the left side;

pivoting up a tray pivotally attached to the right rear rail and the left rear rail of the rear section of the stepladder and below the top with the top extending over the tray from a closed position essentially in parallel with the right and left rear rails to an opened position essentially in parallel with and below the top surface and which causes right and left tray links to push locking pins to which each tray link is attached into a locking hole of a slot in each side of the tray, securing the tray in the opened position; and

closing the tray to the closed position by pulling the left and right tray links laterally outward with respect to the tray which causes the locking pin attached to each of the right and left tray links to be moved out of the locking hole in the slot in each side of the tray and pushing down on the tray so the locking pin slides down the slot in the side of the tray.

2. A method as described in claim **1** wherein the locking pins that secure the tray in the opened position are part of a first locking assembly engaged with the tray and the left tray link to lock the tray in the opened position.

3. A method as described in claim **2** including the steps of moving the tray from the opened position to the closed position and locking the tray in the closed position with a second locking assembly.

4. A method as described in claim **3** wherein the locking the tray in the opened position includes the step of moving the locking pin of the first locking assembly extending into the slot of the tray and attached to the left tray link into the locking hole of the tray to lock the tray in the opened position.

5. A method as described in claim **4** wherein the moving the tray from the opened position to the closed position includes the step of snapping a closing stud of the second locking assembly attached to the left tray link into an opening of the tray to lock the tray in the closed position.

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